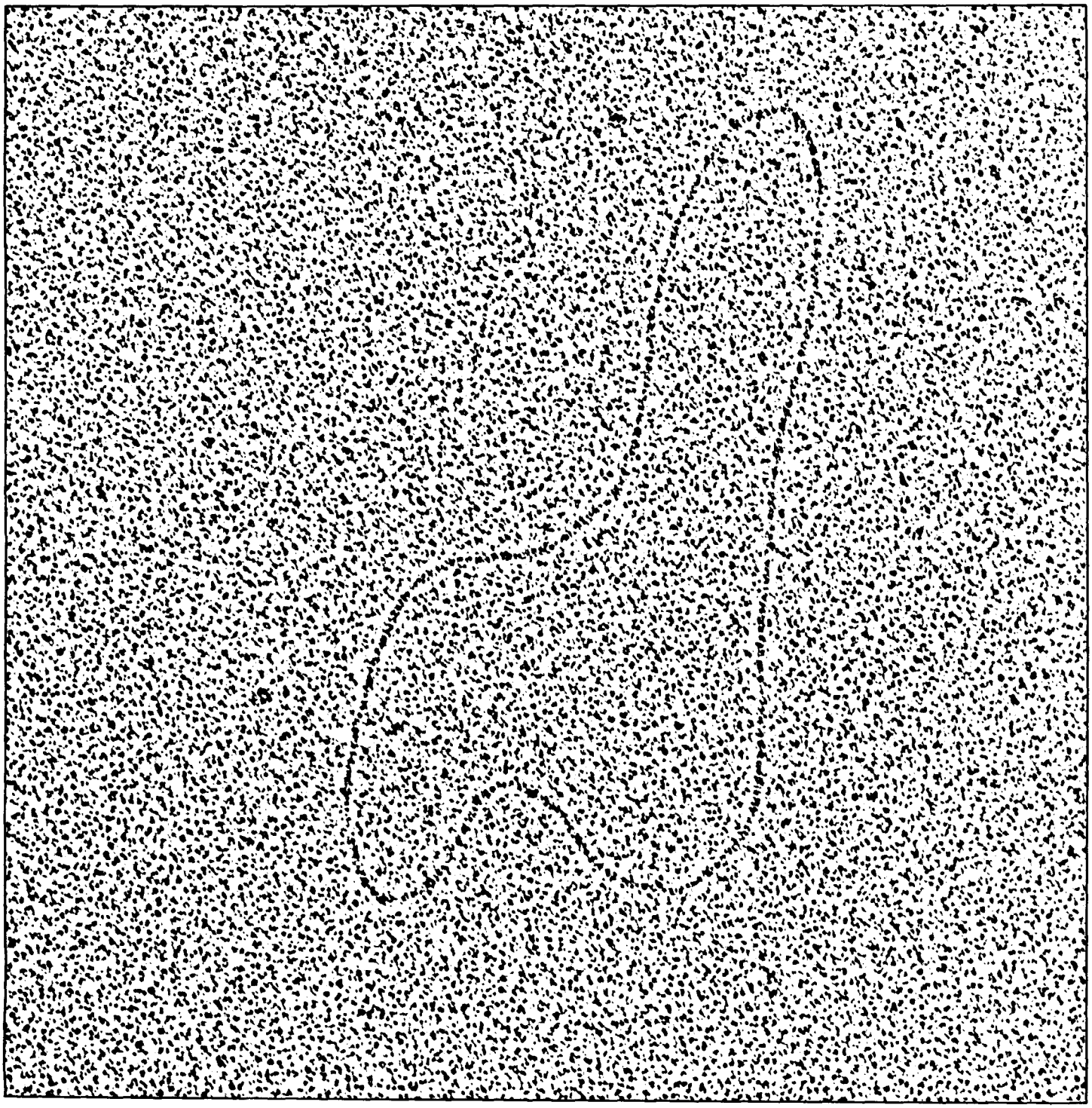
University of Minnesota

Medical Bulletin

Winter, 1981



University of Minnesota Medical Bulletin

Minnesota Medical Foundation
Winter, 1981

PUBLISHED BY THE MINNESOTA MEDICAL FOUNDATION

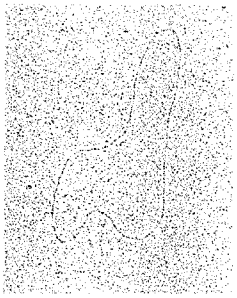
Publishing Information: The University of Minnesota *Medical Bulletin* is published quarterly by the Minnesota Medical Foundation in behalf of the University of Minnesota Medical Schools (Minneapolis and Duluth), Minnesota Medical Alumni Association, and the Minnesota Medical Foundation. Statements and opinions published herein are exclusively those of the authors themselves.

There is no subscription fee. No advertising is accepted. Publication is made possible by contributions to the Minnesota Medical Foundation.

Publication Office: Minnesota Medical Foundation, 5412 Powell Hall, University of Minnesota, Minneapolis, Minnesota 55455. Phone: (612) 373-8023

Editor & Photographer: Liz Miller

Change of Address: Please enclose old and new address and mail to: The Minnesota Medical Foundation, 5412 Powell Hall, University of Minnesota, Minneapolis, Minnesota 55455.



Cover

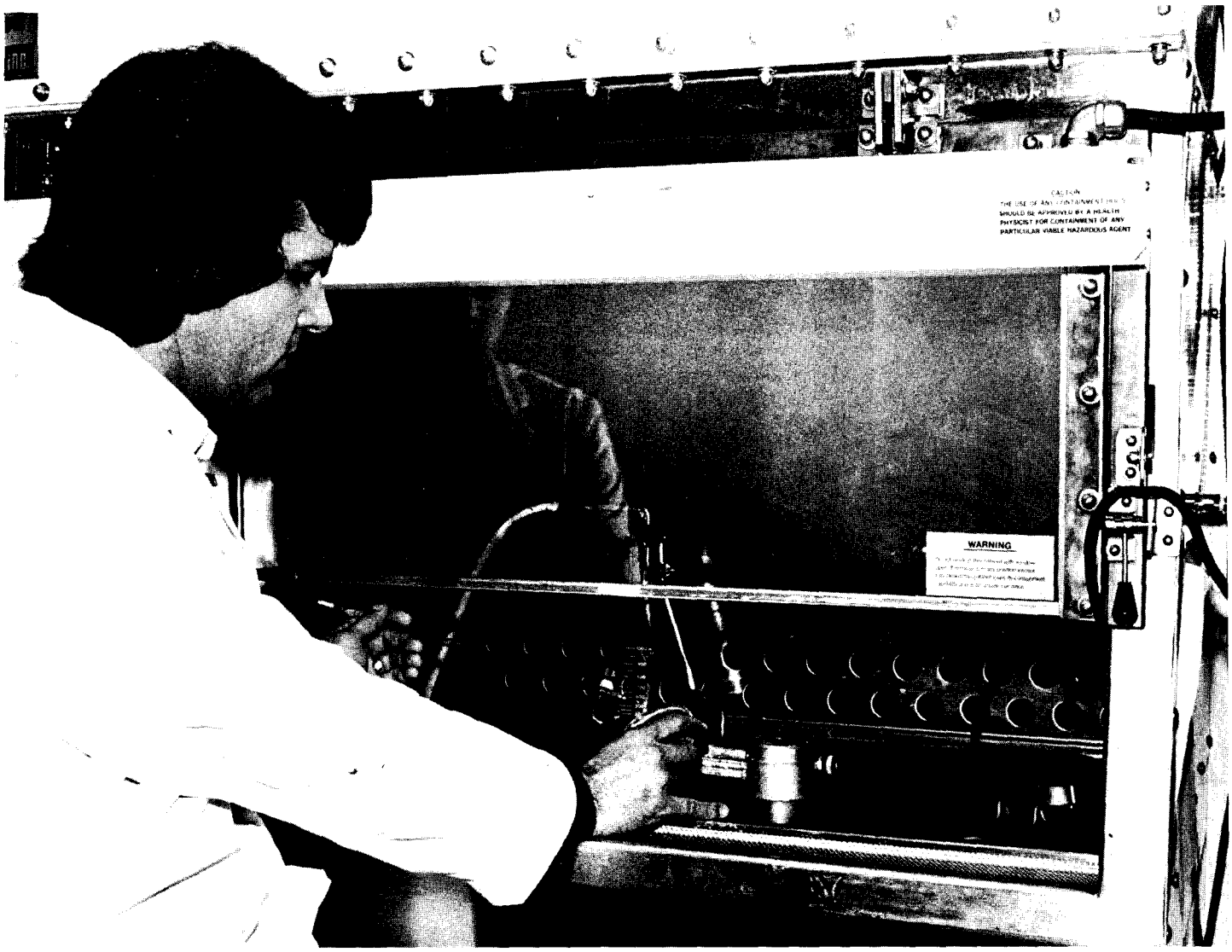
This is an electron micrograph (a picture taken by electron microscope) of a circular DNA molecule, or plasmid, the key DNA element of genetic engineering. Enlarged 120,000 times in this micrograph, the molecule is large enough to contain four to five genes. The DNA molecule is 1/250,000th the size of a human chromosome, which is not visible to the human eye. The human chromosome contains about a million genes.

This cover highlights the work of microbiologists like Dr. Anthony Faras here at the University. Faras' work in recombinant DNA technology has made great inroads in the field of genetics and could have far-reaching implications in curing diseases as well. For a clear and candid overview of the technology, application, moral and legal implications of genetic engineering, please read the story beginning on page 1 by science writer George Jordan. We're sure you'll find it as fascinating and enlightening as we did.

Contents

1 Genetic Engineering Ushers In a New Age
7 Campus News
15 Top-Ranking U Transplant Team
18 Update on Heart & Pancreas Transplants
19 Easing the Shortage of Transplant Organs
22 Implanting An Artificial Pancreas: The Pump
23 Alumni Notes
24 In Memoriam

Genetic Engineering Ushers in A New Age



Microbiology professor, Dr. Anthony Faras, works with recombinant DNA bacteria under the biosafety hood in the Recombinant DNA Laboratory. The hood is a special safety feature which allows the researcher to perform experiments with infectious bacteria in a controlled environment that prevents the spread of this bacteria.

By George E. Jordan

The journey into the world of genetic engineering — the altering of heredity by transplanting genes from one organism to another — has turned the second half of the 20th century into the age of the biologist.

Test-tube babies, the development of oil-eating bacteria and methods of screening for genetic defects, talk of human cloning and "plant people," and the actual creation of organisms in the laboratory are products of a new technology that promises startling breakthroughs in the future.

Experiments with basic recombinant DNA technology, or gene splicing, are being conducted in laboratories across the nation. Scientists' dreams of curing hereditary diseases through gene transplants and development of better biochemical products are on the verge of becoming a reality.

"Restrictions with regard to the future of recombinant DNA are limited only by the human imagination," said Anthony Faras, a professor of microbiology engaged in recombinant DNA cancer research at the University of Minnesota.

"Any gene of interest, whether for scientific or industrial reasons, can be isolated, characterized and its gene products reproduced by recombinant DNA technology," Faras said.

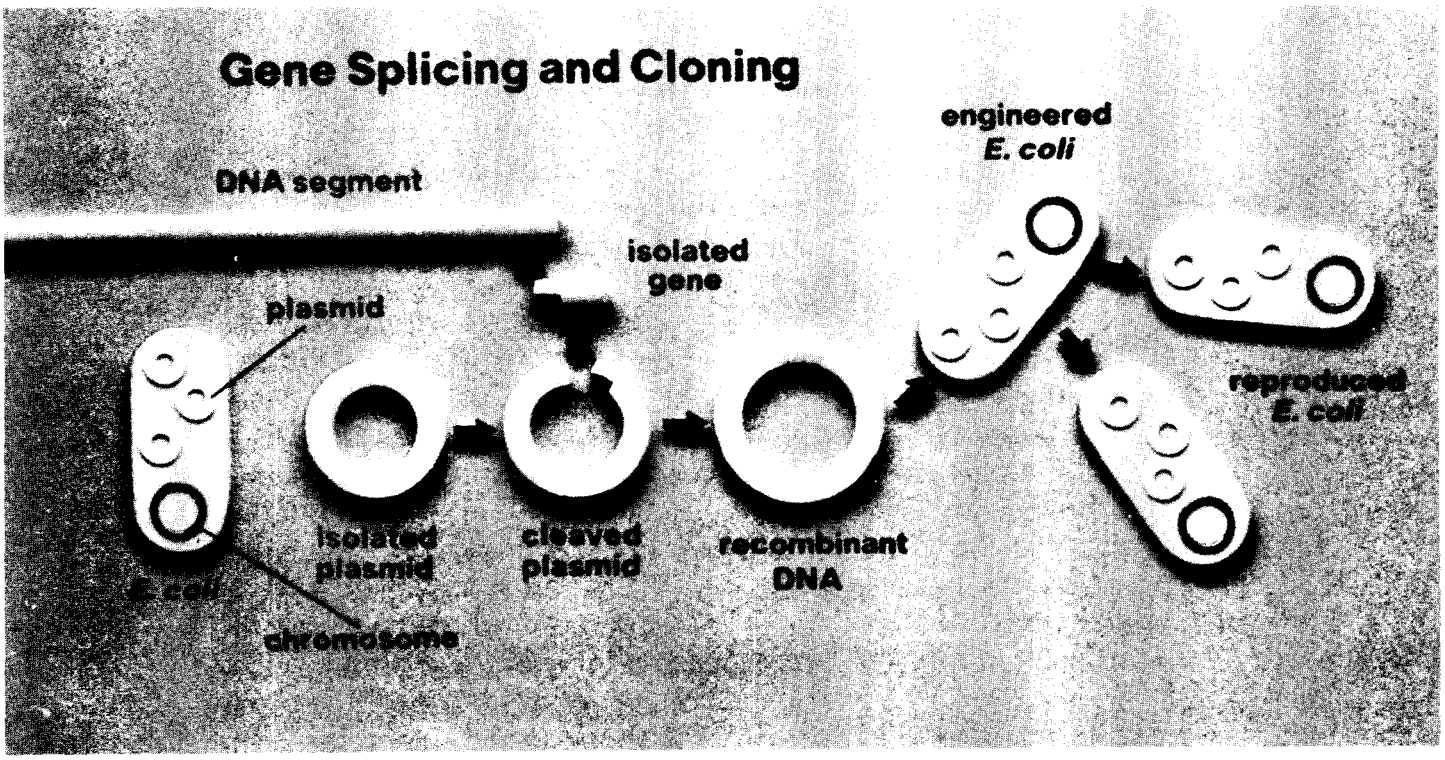
At the University of Minnesota, recombinant DNA technology is being applied in 24 research projects. The scope of the work is broad, and preliminary gene splicing research holds promise of yielding cures for many diseases.

University researchers are using the technology to study gene structure, to search for viral cancer agents and to compare blood disorders in animals to those in humans. Other projects include work on improving the fermentation of yeast and increasing the yield of farm crops.

Although the science of genetic manipulation is in its infancy, it has already raised a multitude of issues that society must face, issues that will force mankind to rephrase questions about the meaning of its existence.

Suppose that scientists could alter the properties of any living thing. Imagine a society rid of illnesses like Huntington's chorea, cystic fibrosis, diabetes, sickle cell anemia and cancer. In a sense, science and technology might be in a position to control the genetic destiny of mankind.

But is it wise to attempt control over such destiny? Do the benefits of curing heredity diseases outweigh the risk of



The basic techniques of recombinant DNA technology.

Dr. Faras holds a petri dish in which bacteria containing recombinant DNA is isolated.

encountering some unknown evil?

"I don't think man will ever be wise enough to know what to breed for to protect the survival of mankind," said Irwin Rubenstein, a University professor of genetics and cell biology engaged in recombinant DNA research with agricultural plants, such as corn.

Moreover, assuming science cannot overcome social and economic realities, who will benefit from or be able to afford the new cures? "To divorce the discovery of recombinant DNA from the society surrounding that discovery is foolish," Val Woodward, University professor of genetics and cell biology, said.

Prior to the landmark Supreme Court decision last spring that living matter is patentable, most public debate over genetics concerned the theories of Authur Jensen and William Shockley who claim that blacks are genetically inferior to whites.

How would America's Jensens and Shockleys like to see gene splicing technology used?

And Pope John Paul II, the spiritual leader of 706 million Catholics, warned at a conference this fall that dire consequences could result if gene splicing technology was not guided by humanistic principals.

Advocates of genetic manipulation say public clamor over recombinant DNA experiments overlooks the enormous potential for good. Genetic engineering companies, such as Genentech of California, they argue, have developed such products as human insulin, human growth hormones and interferon, a type of natural virus fighter and potential cancer drug.

Scientists anticipate the development of bacteria that will turn pollutants into fuel and enrich foodstuffs before the turn of the century. And it's likely genetic engineers will find vaccines effective against some forms of cancer.

Recombinant Gene Splicing

While moral and ethical arguments on both sides of the genetic engineering controversy are confusing, the actual process of gene splicing is simple to understand.

The term "recombinant" refers to the splitting and recombining of genes, the substances that govern the machinery of the living cell. DNA, or deoxyribonucleic acid, is the agent that carries the information of heredity in discrete units called genes.

Genes are microscopic, but play an enormous role in determining how every cell in every living thing develops and matures, from the frog in the pond to the next Albert Einstein. Human beings have roughly 50,000 active genes, and each is programmed to perform a different function.

Genes are strung together into threadlike bodies called chromosomes, which carry the "information" that directs the body's physiology from womb to death. Think of a chromosome as a string of genes similar to a necklace of pearls.

In the 1970s, researchers developed "restrictive enzymes" that could dismantle chromosomes neatly into individual genes. In effect, restrictive enzymes act like scissors, cutting the string of pearls, and breaking a chromosome into individual genes that can be isolated and studied.

Once a chromosome is separated into its individual genes, scientists can introduce these genes into a bacteria host where the genes turn out countless copies of themselves. The copies, called clones because they are identical in every respect to the original gene, can be tested for their specific functions.

If researchers identify a gene that tells a cell, for instance, to produce a specific protein, the gene can then be recombined with a plasmid vector, or host, and introduced into bacteria, inducing the bacteria to manufacture the protein.

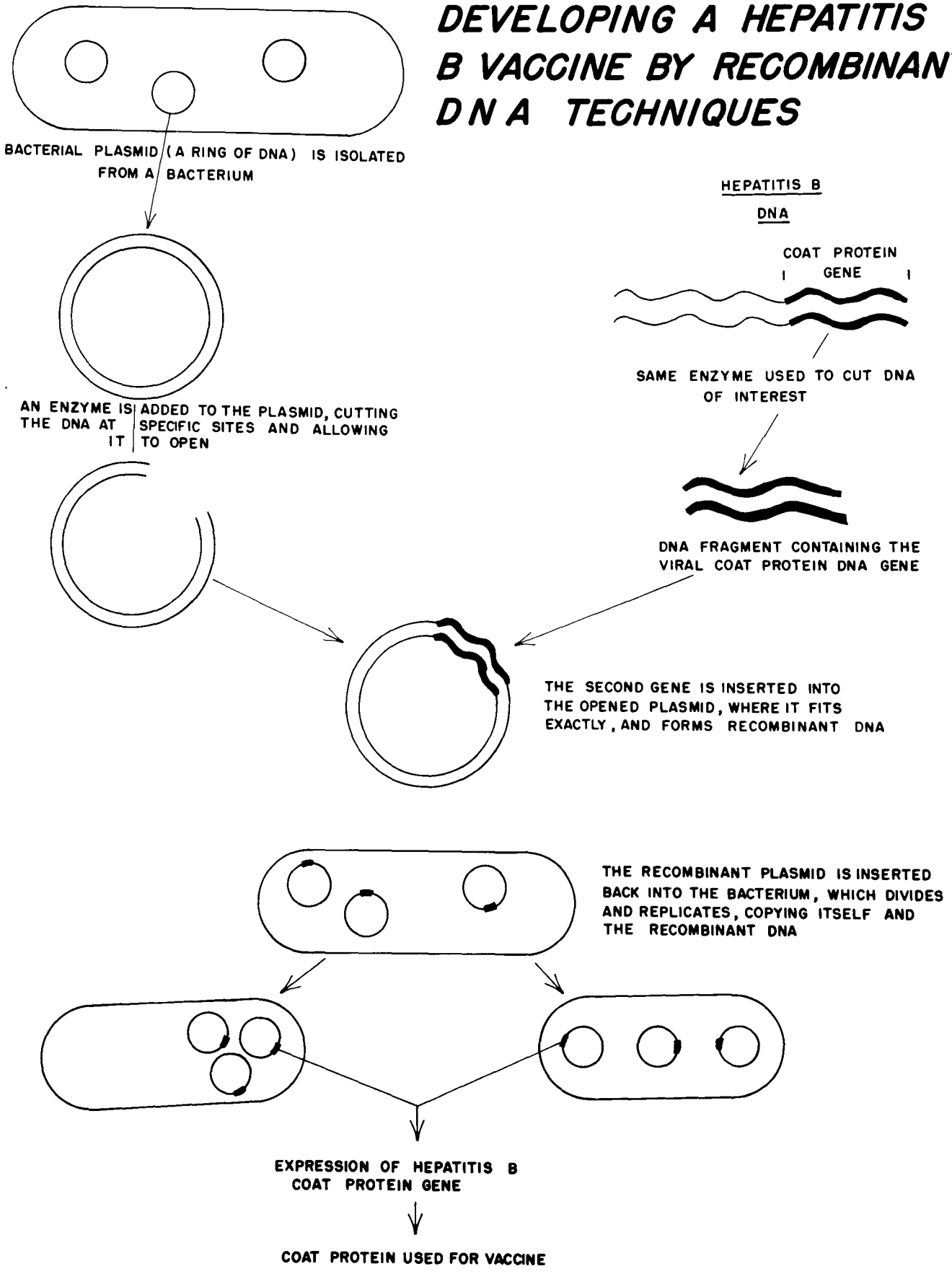
In theory, the technique could allow scientists to accomplish the genetic blend of two altogether different creatures incapable of mating by inserting the genes from one into the chromosomes of the other.

Cancer cures?

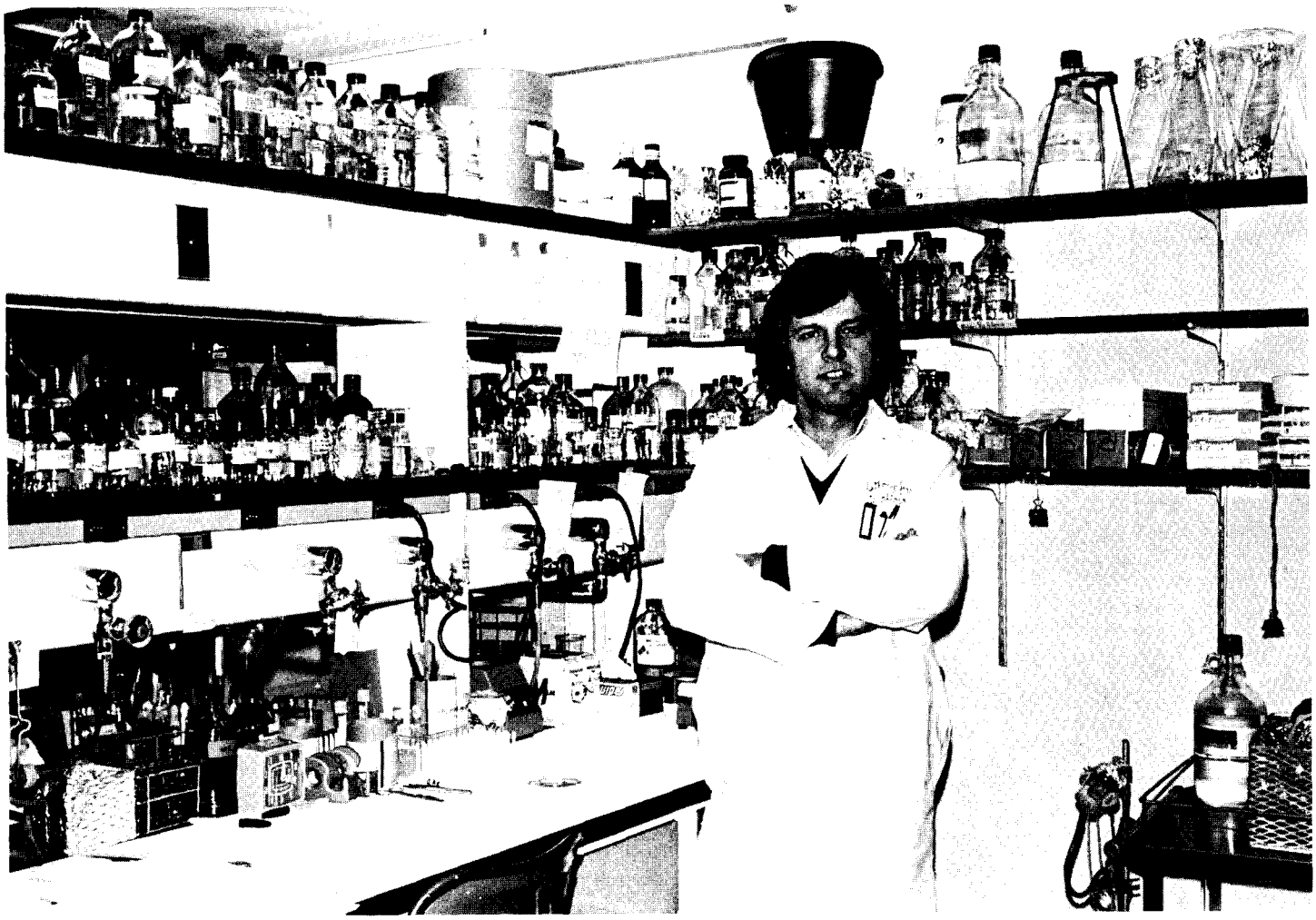
Since the late 1950s, the American scientific community has been on a collective quest to find a cure for cancer, and while it has thus far produced many positive results, a cure for some cancers has yet to be found.

The bulk of the University of Minnesota cancer research using recombinant DNA technology is focused on the way normal cells

DEVELOPING A HEPATITIS B VACCINE BY RECOMBINANT DNA TECHNIQUES



A specific application of recombinant DNA technology.



Dr. Faras directs numerous University research and educational programs that utilize recombinant DNA technology. He also heads the well-equipped Recombinant DNA Laboratory at the U, pictured above. The lab has special air, filter, and climatic controls to contain the spread of infectious bacteria within the walls of the lab. This physical containment lab was set up over a year ago with assistance from the Minnesota Medical Foundation. It provides a safe, controlled environment where Faras and his team of researchers can work without fear of dangerous bacteria escaping from the room.

become cancerous and the role genes might play in cancer.

"Cancer is a very complicated disease," Faras said. "At present, we have a better basic understanding of the nature of cancer-causing genes than we did a few years ago."

Faras' research group is studying two aspects of cancer: how normal genes "turn on" to cause cancer, and why certain benign (noncancerous) tumors, such as warts, progress into cancer tumors.

The progress of warts from benign to cancerous is rare, occurring only in certain types of warts, such as anogenital warts and reddish skin warts called epidermodysplasia verruciformis.

Faras' group has found that such warts are caused by a specific virus, called the papilloma virus. Researchers speculate that the virus activates a gene, or combination of genes, that usually lie dormant in normal wart tissue.

Infections and viral diseases are commonly fought through the use of vaccines. The virus responsible for polio, for example, is grown in large amounts in the laboratory where it is killed and purified. The killed-virus is then injected into the body, causing the immune system to react against the intruder by manufacturing antibodies that attack the foreign virus.

But the problem with the papilloma virus is that it cannot be grown in the laboratory. How, then, can a vaccine be produced?

The papilloma virus looks like a series of sphere-shaped particles, each surrounded by a protein shell. The shell is foreign to the human body and, therefore, signals the immune system to attack.

Faras' research group at the University of Minnesota is using recombinant DNA technology to identify the gene, or combinant of genes, in the papilloma virus that directs its particles to produce the protein shell.

If such genes are identified, through basic gene splicing techniques, they can be extracted from the virus' genetic information, cloned, and introduced into bacteria where they would produce the virus protein.

"We can inject the bacteria-produced virus protein into the body," where it will trigger the immune system to manufacture antibodies against the live, infectious virus, Faras said.

"In effect, through recombinant DNA technology you could have a vaccine being produced in bacteria tissue culture," he said.

If the papilloma virus is shown to play a role in cancer, and researchers are successful in developing a vaccine,

Faras' group has made significant strides in recombinant DNA cancer research.

it's possible that such a vaccine might help reduce the incidence of cancer.

Faras warns, however, that much work must be done before a papilloma virus vaccine can be developed. He said that experiments are yet to prove that a virus is involved in wart-derived cancers.

Legal Questions

If researchers develop better biomedical agents or new vaccines, the material would logically be in demand. And potentially lucrative patents on agents stemming from genetic engineering research have investors proclaiming the age of gene splicing as "The New Industrial Revolution."

Several universities, including Harvard, Yale, the Massachusetts Institute of Technology and the University of California, hold patents on biomedical products developed through genetic manipulation.

Harvard University announced recently it was considering the establishment of a genetic engineering company, but later shelved the idea after faculty members said the plan could violate standards of academic freedom and curtail the common practice of sharing research materials.

Sprouting up in industrial parks across the nation are small commercial companies seeking ways to mass-produce biomedical products, such as human growth hormones and interferon, a potential cancer drug, genetically engineered in the laboratory.

None of the much-heralded products of gene splicing have reached the market yet, nor is anyone sure how effective genetically engineered insulin and interferon, the two products closest to market, will be.

But maneuvering by companies to capitalize on the molecular genetics industry has raised a number of legal and scientific issues. Who owns microorganisms being produced in collaborative efforts between scientists and commercial researchers?

The University of California at Los Angeles is engaged in what's expected to be a lengthy court battle with Hoffmann-LaRoche, Inc. and Genentech over an interferon producing cell line developed by university researchers and eventually cloned by Genentech.

The central issue is whether the university has property rights over human genes. Legal experts say no court has set precedent in such matters.

Scientists are concerned that court battles stemming from genetic engineering will undermine research collaboration. They contend that because of the strong incentive to make money, publication of research findings may be delayed until enough information is obtained for a patent application.

Most researchers are less pessimistic, saying the flow of research fluctuates and that any rift caused by gene splicing conflicts is only temporary.

Campus News

M.D. Raises Funds for Leukemia Research at MMF

Dr. Grant Olson, a 1933 alumnus of the U of M Medical School, West Concord, Minn., recently helped provide $1,500 in leukemia research funds for the Medical School just by mentioning the Minnesota Medical Foundation to a patient who asked him for advice.

Mrs. Aldrich Iverson, whose husband had just died of leukemia, asked Dr. Olson the best way to direct memorial gifts to research. He told her that the Minnesota Medical Foundation does not deduct operating expenses or overhead from gifts and gave her the address (Box 193 University Hospitals, University of Minnesota, Minneapolis, Mn. 55455). She told her friends, and, to date, the memorial gifts have totalled $1,500, enough to fund the average start-up research project.

The Foundation accepts gifts in support of its general purposes or those restricted to particular research or educational interests of contributors. Memorial gifts are acknowledged promptly to the surviving family (not by dollar amount) and receipted to the donor.

MMF Trustee Donates $50,000 for Student Loans

Gladys and Rudolph W. Miller, of Winona and Excelsior, Minn., recently gave $50,000 to the Minnesota Medical Foundation to set up a student loan fund for U of M medical students. Miller, a prominent Winona businessman, was recently elected to the Foundation's Board of Trustees. He has been a very generous supporter and contributor to the Foundation in the past. The new student loan fund will be entitled "The Gladys and Rudolph Miller Loan Fund."

Name of Masonic Hospital Changed

The U of M's Masonic Hospital has been changed to the Masonic Cancer Center to reflect its development as a cancer research-patient care center.

Dean Gault To Visit Panama

U of M Medical School Dean Neal L. Gault, Jr., was recently named a United States delegate to the VIII PanAmerican Conference on Medical Education, Panama City, Republic of Panama. Gault recently completed six years as an elected member, representing the Midwest-Great Plains medical schools of the Administrative Board of the Council of Deans and the Executive Council of the Association of American Medical Colleges (AAMC).

Najarian Receives Honorary Doctorate

Dr. John S. Najarian, professor and chief of surgery at University Hospitals, received an honorary doctorate from the University of Athens Medical School, Nov. 6, 1980. At the award ceremony, Najarian presented a lecture on "Transplantation for Diabetes Mellitus." Host for the social and medical program was Dr. Pan Chrysospathis, professor and chairman of surgery at the University of Athens.

50-Yr. Class Reunion, June 4, 5

All members of the U of M graduating medical classes of 1930, 1931, and 1932 are invited to attend their 50-Year Reunion celebration, June 4 at 6:30 p.m. at the Town and Country Club. Dr. Vernon D. E. Smith, Dr. O. L. Norman Nelson, Dr. S. Lane Arey, Dr. Bror Pearson, and Dr. Richard Lindgren are planning the events. On June 5, the following day, the entire visiting reunion party will be honored at the U of M Medical School 1981 Graduation Program at Northrop Auditorium, Dean Gault announced.

For information, contact Kathy Broderick, Minnesota Medical Foundation, (612) 373-8023.

U of M Spring Seminar & Reunion to Take Place March 27

The third annual "New Horizons in Minnesota Medicine" Spring Seminar and Reunion Program will be March 27, 1981, Dr. James P. Brown, Medical Alumni president, announced.

All University of Minnesota medical alumni and their colleagues are invited to attend this one-day event sponsored by the U of M Medical Alumni Society, from 9 a.m. to 3:30 p.m. in the Health Sciences Unit A building on campus.

The seminar is a program of 8–10 information sessions covering a wide scope of up-to-date techniques, advances, research and issues of modern medicine. Noted Medical School researchers and faculty members will lead these sessions.

At noon, a special luncheon will feature the 44th Annual Meeting of the Medical Alumni Society, with presentation of the prestigious **Harold S. Diehl Award** to a distinguished alumnus.

A U of M Medical Alumni Reception will take place from 6 to 8 p.m. at the U of M Alumni Club in the IDS Tower in downtown Minneapolis. After the reception, numerous activities are

Campus News

planned for medical alumni from the classes of 1946, 1951, 1956, 1961, 1966, and 1971.

The seminar offers participants five Continuing Medical Education Credits in Category I and five credits from the American Academy of Family Physicians.

For further information and reservations, call the Minnesota Alumni Association at (612) 373-2466.

Shideman Elected Convention President

Dr. Frederick E. Shideman, chairman of the department of pharmacology at the University of Minnesota Medical School, has been elected president of the United States Pharmacopeial Convention (USPC).

The convention establishes standards for drug use in the United States, and is composed of delegates from each college and state association of medicine and pharmacy, 22 national organizations and eight agencies of the federal government.

Standards approved by the USPC are enforced by the federal Food and Drug Administration.

Shideman has been a member of the University of Minnesota faculty since 1962. He holds a doctorate in medicine from the University of Michigan and a doctorate in pharmacology from the University of Wisconsin.

A member of many professional and honorary societies, Dr. Shideman is also chairman of the National Council on Drugs. He served for five years as chairman of the scientific advisory committee on drugs to the U.S. Department of Justice.

Wannamaker Receives 1980 Koch Prize & Medal

Dr. Lewis W. Wannamaker, professor of pediatrics and of microbiology at the University of Minnesota, has been selected by the Robert Koch Foundation to receive a Robert Koch Prize and Medal for 1980. This Foundation and its awards are named after the pioneer German bacteriologist, Robert Koch.

Dr. Wannamaker's recognition is for "numerous scientific contributions in the area of streptococcal infections in man, especially the bacteriology and epidemiology of acute nephritis, the prevention of rheumatic fever and the characterization of important streptococcal extracellular products, whereby the pathogenesis of streptococcal infections has been extensively clarified."

The award ceremony was held on December 8, 1980, in Bonn, West Germany with presentation by the Minister of Youth, Family and Health. In addition to the medal, a prize in the amount of 40,000 German marks was awarded. Dr. Wannamaker attended this occasion and delivered a lecture, which will be published in a scientific journal.

Wannamaker has been a member of the faculty of the University of Minnesota Medical School since 1952. In 1958 he was named a Career Investigator of the American Heart Association, a life-time appointment with possibility of pursuing research studies at any university he chooses, but he has elected to remain at the University of Minnesota. In September, 1980, Dr. Wannamaker went on sabbatical leave, studying and continuing his investigations of streptococcal infections and their complications at the Rockefeller University, New York City, under the auspices of a Macy Faculty Scholar Award.

Paula Clayton Named Head of Psychiatry

Dr. Paula Clayton, professor of psychiatry at Washington University in St. Louis, has been named professor and head of psychiatry at the University of Minnesota Medical School.

The appointment was approved this fall by the University's Board of Regents.

Clayton, 45, is the first woman to head a Medical School department at the University. She replaces Dr. William Hausman, who resigned.

Clayton holds a bachelor's degree from the University of Michigan and an M.D. degree from Washington University, where she has been a School of Medicine faculty member since 1961. She has also served as a clinical psychiatrist at Barnes and Renard Hospitals in St. Louis.

Among Clayton's professional interests is the study of how people cope with grief. She has published more than 60 professional articles on this and other subjects.

Clayton serves on the editorial boards of Biological Psychiatry and the Journal of Affective Disorders.

LaBree Accepts U of M Position

Dean John W. LaBree has been named Assistant Vice President in the Office of the Vice President for Health Sciences at the University of Minnesota, Twin Cities Campus.

The position was approved May 9 by the University of Minnesota Board of Regents.

LaBree will be responsible for coordinating all existing health science outreach teaching and service programs at the University of Minnesota, as well as planning new outreach efforts.

Some of the outreach efforts include the Area Health Education Consortium (AHEC) and all continuing education programs, according to LaBree. He will continue his interests in teaching and patient care through the department of medicine at the University of Minnesota Medical School.

LaBree succeeded Robert Carter as dean in 1975. As dean, he strengthened community physician support, acquired funds for faculty research and saw an increase in both faculty and class size. Also during his tenure, a new medical teaching facility was built on the UMD campus.

A cardiologist, LaBree received his M.D. from the University of Minnesota Medical School in 1940. Before coming to UMD, LaBree was Director of Medical Education at St. Mary's Hospital in Minneapolis from 1970–1975. He was one of the ten original founders of the St. Louis Park Medical Center.

LaBree assumed his new position this summer.

Behavioral Health Clinic Opens at U of M

A behavioral health clinic that can help people with smoking, drinking, eating and stress problems has opened at University of Minnesota Hospitals.

Staffed by psychologists, social workers, psychiatrists and nurses, the clinic is open weekdays from 8 a.m. to 5:30 p.m for patient evaluations. Treatment sessions are held during the evening.

"Health care providers are beginning to recognize that treating a specific disease alone is not sufficient," said Dorothy Hatsukami, clinic director. "It is also important to treat the problem behaviors that cause or exacerbate the illness. The clinic helps people modify or eliminate behavior detrimental to their health."

Following evaluation, a patient is assigned to a support group of about 10 persons with the same problem. The group meets once a week for 8 to 10 weeks to share concerns and learn techniques for altering habits.

"The focus of the program is positive," said Juanita Klukken, program coordinator. "We don't emphasize previous failures. We stress encouragement and support. If someone smokes 50 cigarettes a day and reduces that by five, that's a small success and it should be commended."

Although the majority of patients are expected to come through referrals from health professionals, individuals are welcome to contact the clinic directly. The program is open to both men and women ages 18 and older.

The clinic is located on the eighth floor of the Phillips-Wangensteen Building on the Minneapolis campus. For more information, call the clinic at (612) 376-9166.

Campus News

Metro Council Approves U of M Hospitals Project

A $233-million plan to modernize University of Minnesota Hospitals was endorsed Dec. 4 by the Metropolitan Council, an umbrella planning agency for the Twin Cities area.

In a 7-4 vote, the council recommended that State Commissioner of Health George Petterson grant a certificate of need for new construction and renovation of hospital facilities on the Minneapolis campus.

A certificate of need is required of every licensed hospital in the state before any project costing more than $150,000 can be undertaken or any change is made in hospital services. Since 1971, hospital building proposals have faced a stringent review process aimed at cutting health care costs through better use of facilities.

Approval by the Metropolitan Council comes on the heels of a 14-2 Metropolitan Health Board vote last month to back the project. The health board's action followed a two-and-one-half month review by staff and committees.

Although the University plan drew opposition from four Metropolitan Council members Dec. 4, none denied the apparent need for new facilities at University Hospitals, portions of which were built in 1911. Instead, they questioned aspects of the review process and financing plan.

This month the University is proposing to the legislature and governor a plan to finance the project through the sale of state general obligation bonds, which will be repaid by the University through patient care revenue. By borrowing the state's "credit card," the University will be able to save approximately $40 million in debt financing charges.

Council members voting to endorse the project were Todd Lefko of St.

Paul, Charles Weaver of Anoka, Charles Rafferty of St. Paul, Alton Gasper of Minneapolis, Ernest Lindstrom of Richfield, Marcia Bennett of Columbia Heights and James Daly of Belle Plaine.

Those opposed were Gladys Brooks of Minneapolis, Roger Scherer of Brooklyn Center, Martin Kellogg of St. Paul and Dirk deVires of Minnetonka. There were four abstentions.

Major components of the renewal project include:

- Construction of a new 10-story building, called Unit J, on the site of Powell Hall, the old nursing dormitory. Unit J will contain approximately 500 acute adult and pediatric beds now located in the main Mayo hospital building and Variety Club Heart Hospital. The new facility will also contain surgery suites, labor and delivery rooms, and diagnostic and treatment services.
- Renovation of Variety Club Heart Hospital to house psychiatric services now located in Mayo.
- Renovation of vacated space in the Mayo building for administrative and support services.

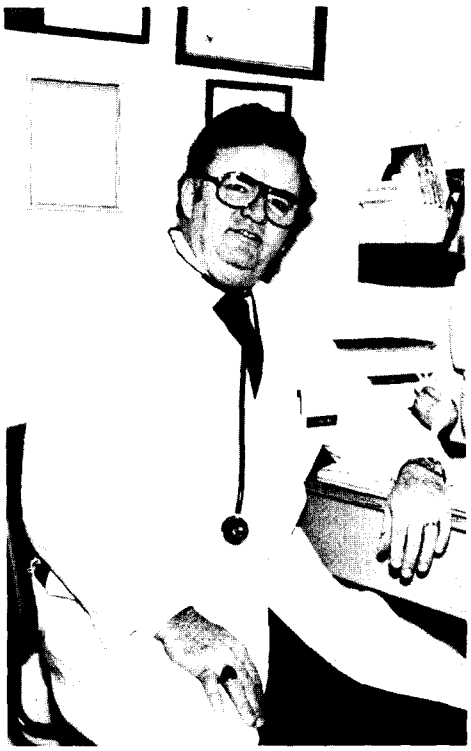
The certificate of need application calls for the licensing of 719 beds — four more than at present.

Construction is tentatively scheduled to begin in July of 1981. Completion of the new facility is scheduled for 1985 and the renovation should be complete in 1987.

Kelly Elected to AMA Board

Dr. Robert T. Kelly, a 1952 alumnus of the U of M Medical School and a clinical associate professor of family practice at the U Medical Schools in Minneapolis and Duluth, was elected to a three-year term on the Board of Trustees of the American Medical Association (AMA) at the annual meeting this summer. He is the first trustee to be elected to the board from Minnesota since 1940.

Kelly is a family practice physician in Grand Rapids, Minn., where he works



Kelly

at a private clinic composed of a nine-man multi-specialty group.

He has been serving as chairman of the American Medical Association's Council on Medical Service and was added to the 12-man governing body by the AMA's 279-member policy-making body of the House of Delegates.

A delegate to the American Medical Association representing Minnesota since 1968, he has been a member of the American Medical Association's Speaker's Bureau and chairman of the Ad Hoc Committee on PSRO of the Council on Medical Service.

Active in the Minnesota Medical Association, Dr. Kelly served as president from 1971 to 1972. He was a member of the House of Delegates of the Minnesota Medical Association from 1958 to 1972.

Dr. Kelly's participation in medical associations and organizations includes member, Minnesota Academy of Family Physicians since 1952; charter diplomat, American Board of Family Practice; and president, North Central Medical Conference, 1977–78.

In addition, he served as chairman of the committee which formed the Range Medical Society, serving as president and secretary-treasurer.

As a member of the Itasca Memorial Hospital in Grand Rapids, Kelly has served as president, secretary-treasurer, and chairman of the Medical Records Committee.

Ray Anderson Honored at Symposium

The U of M department of pediatrics sponsored a two-day symposium on pediatric cardiology Oct. 22–23, in honor of retiring pediatrics professor, Dr. Ray C. Anderson, M.D., Ph.D. Anderson had been on the faculty for over 31 years.

The symposium included papers by 20 former pediatrics residents of the University Medical School who had

Campus News

chosen cardiology as an elective. A luncheon and special dinner were also included in the symposium activities, with Dr. Russell Lucas, U of M professor of pediatrics, and Dr. Gerald Scheibler, professor and chairman of pediatrics at the University of Florida, officiating. William E. Ladd Professor of Cardiovascular Surgery, Dr. Aldo Castenada, of Harvard Medical School, also delivered a lecture at the symposium.

U of M Seeks Volunteers for Ragweed Allergy Study

Volunteers are needed to participate in a University of Minnesota study of ragweed allergies.

Individuals must be 18 years or older, residents of the Midwest for at least half of their lifetimes, and suffer from asthma or hay fever during the ragweed season, August and September.

"We are studying the genetics of allergic diseases — how they are passed on from generation to generation," said Dr. Malcolm Blumenthal, associate professor of medicine and the project director.

Volunteers will be asked to spend two or three hours in the laboratory, giving their medical history and undergoing some simple skin and blood tests. The project needs 100 ragweed-sensitive individuals.

Persons interested in participating in the study may contact the University of Minnesota Allergy Research Laboratory at 373-4328.

Eivind Hoff, executive director of the Minnesota Medical Foundation, presented Joseph Prohaska, UMD assistant professor of biochemistry, with a $25,000 check this summer for purchase of an atomic absorption spectrophotometer, to be housed in the biochemistry department at the University of Minnesota-Duluth.

The AAS unit is equipped with graphite furnace capabilities to enable researchers to analyze trace amounts of elements present in biological samples. Prohaska, for example, will use it to measure copper levels in small amounts of brain tissue. As little as $5X10^{-9}$ grams of copper can be detected with this instrument.

Pictured from left to right are former Dean John LaBree, Paul Anderson, chairman of the biochemistry department, Prohaska, Hoff, and Dr. Robert Howard, former trustee of the Minnesota Medical Foundation.

Flynn Wins Ernst Award

Dr. Kevin Flynn, St. Paul, recently won the 1980 Kenneth F. Ernst Award, a $300 prize and plaque for outstanding research in anatomic pathology sponsored by the Minnesota Medical Foundation. He recently completed a residency in pathology and has just begun a residency in dermatology at the University of Minnesota.

Flynn won the award for his research in pathology on "Regressing Atypical Histiocytosis." In his research, he combined his pathology and dermatology interests to define and name a very unusual skin tumor, Regressing Atypical Hystiocytosis (RAH). RAH is a condition that is treated as a malignancy based upon its appearance under the microscope. But Flynn has found that RAH is probably a "far more indolent disease than ordinarily expected." "This research may help patients with this condition avoid radical treatment usually prescribed for malignancies," Flynn said.

Over 300 Parents of Med Students Come to Learn about Med School

Parents get a glimpse of the Medical Bulletin at Parents Day.

More than 300 persons attended the annual Parents Day, Nov. 1, sponsored by the Minnesota Medical Foundation.

Parents of first-year med students came from as far away as California, and as close by as the twin cities and many of the surrounding suburbs and counties.

Begun in fall, 1976, Parents Day has become an important tradition at the Medical School. It's the only time that parents and their children can learn together about the Medical School experience and share in each others' observations and concerns. It's a time to relax, talk, reflect, and relate to each other. And it's a good break for students from the rigors of medical classes.

The day consists of a variety of structured and informal activities, including guided tours of the medical and research facilities by faculty and students, talks by the deans and by a current medical student, and a lunch and social hour.

This year's Parents Day was highlighted with talks by Medical School deans Dr. Gault, Dr. Sullivan, and Dr. McCollister, by Committee President, Gale Matson, by first-year medical student, Brad Brainard, and by Medical Student Council President, Ted Grant. The day concluded with some encouraging words by associate dean Dr. Pearl Rosenberg, who spoke on "The Care and Feeding of Medical Students."

The event is sponsored and financed by a grant from the Minnesota Medical Foundation with the assistance of the Medical Student Council.

Boulger Takes Over at UMD Med School

A plaque on the wall of Jim Boulger's office is engraved with his own words: "It'll all work out." And for Boulger, acting dean at the University of Minnesota-Duluth School of Medicine, it seems like it has.

Boulger was appointed acting dean July 1, 1980, following the appointment of former Dean John W. LaBree as Assistant Vice President for Health Sciences on the Twin Cities campus. While serving as acting dean, Boulger is also associate dean for administration, admissions and student affairs, and associate professor of behavioral sciences and clinical sciences.

The "It'll All Work Out" advice has been Boulger's trademark ever since March, 1974, when he and his family came to the UMD School of Medicine from the Medical College of Ohio in Toledo. Since that time, he has seen it all work out for nearly 200 students who have completed their first two years of training in the nation's northernmost medical school. Ninety-six students are currently enrolled; 48 in each class.

It has all worked out, too, for the Duluth Medical School. From its inception a decade ago, the School has attempted to increase the number of students entering family practice. "To date, an unheard of 58% of our students have chosen family practice as a specialty," Boulger said proudly.

One of the reasons for this success is the Family Practice Preceptorship Program, which Boulger has directed since 1975.

The program places individual students with family physicians in office and hospital settings throughout Northern Minnesota and Wisconsin. By providing continuous reinforcement to the student who is interested in family practice, the preceptorship program is extremely popular with both the community physicians and students, according to Boulger. During their preceptor experiences, most second year students live with the preceptor and his/her family for three, three-day periods.

This year, Boulger was faced with a unique problem — more volunteer preceptors in small communities than second year students! "This should serve to strengthen the program, as it will enable a few of the physicians who have volunteered their time, family and community facilities to take a year off occasionally," Boulger said.

Boulger also credits the faculty for the medical school's success. They have created innovative and productive research projects while carrying on an excellent teaching program.

"Over five million dollars in non-University funds have been obtained over the past eight years to support these research and training efforts. This does not count such important and integral support as the Family Practice Financial Aid Fund administered by the Minnesota Medical Foundation," he said.

However, the School of Medicine's greatest strength lies in people, according to Boulger.

"The medical community — which was largely responsible for the establishment of the School — continues to provide us with its fullest support. The faculty is dynamic and really **cares** about the School; the support staff is superb. The students are excellent and really keep us on our toes. Support from Vice President French, Dean Gault and countless others in the Twin Cities has been constant and of tremendous help. And, Bob Carter and John LaBree provided the leadership we needed in the start-up and growth stages, respectively."

"The MMF, too, has been superb in times of need. One of the recurrent problems that every medical school faces is financial — there is never enough money to fully support all the faculty and student programs," he said.

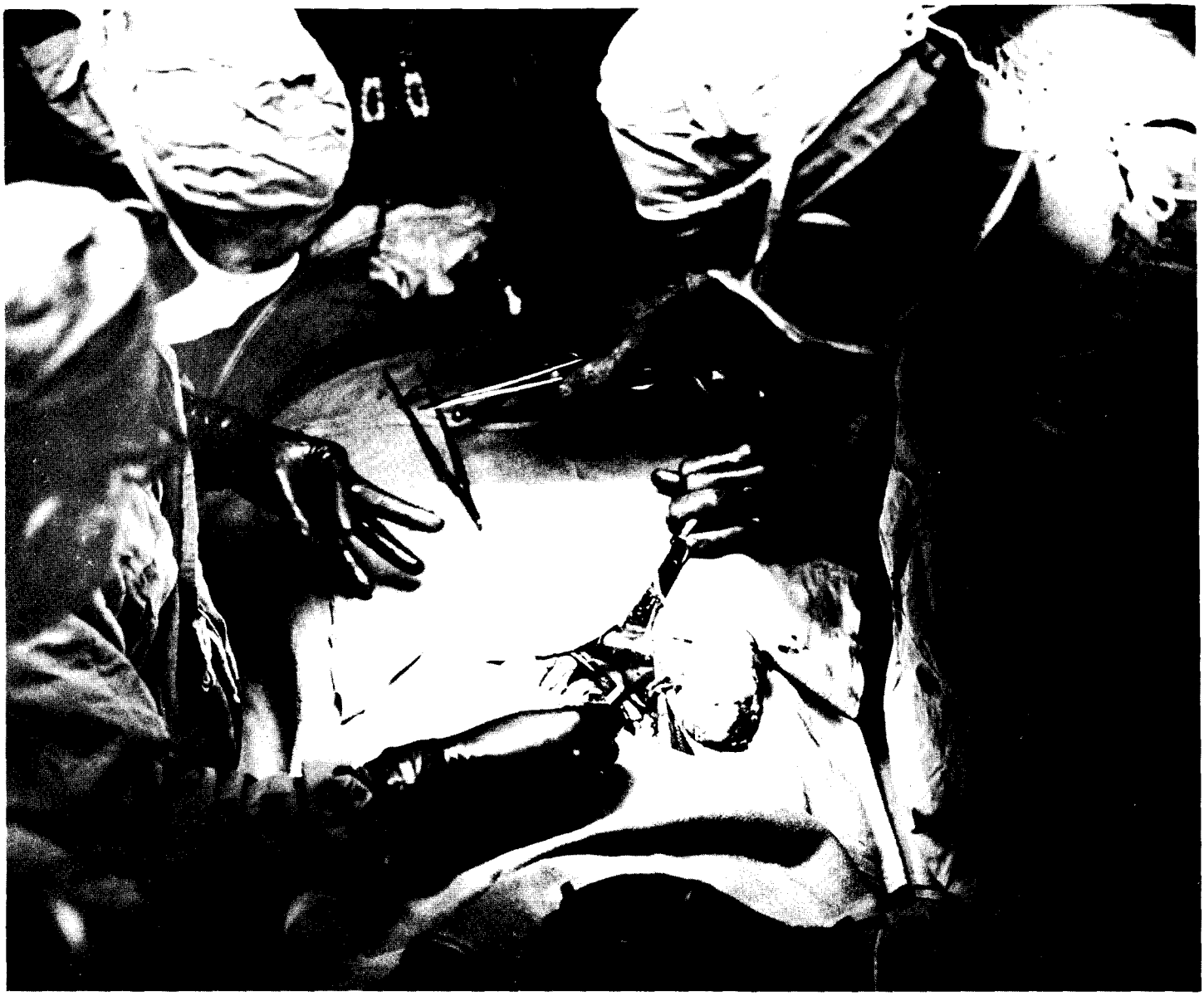
Boulger is also active in the Duluth community. Parents of two sons, Jim and Peter, Boulger and his wife, Dee, serve on the board of the Arrowhead Chapter of the Muscular Dystrophy Association where Jim is First Vice-President. He also is Vice President of his church's Parish Council, and Dee serves on that group's Education Committee.

As well, Boulger is vice-chairman of the Executive Committee of the Duluth Graduate Medical Education Council, Inc., the parent organization of the family practice residency in Duluth, and chairman-elect of the Central Region of the Association of American Medical Colleges Group on Medical Education.

Because of all his responsibilities, Boulger is grateful for the help and support of family and colleagues. "Without the support of my family, I just couldn't handle this chaos. And, I really am lucky to be at the School of Medicine. I don't know of another institution where any dean could so automatically rely on the excellent support of faculty, staff and students."

And besides, it'll all work out.

Top-Ranking U Transplant Team Brings Hope to Many



U doctors perform a kidney transplant.

Dr. John Najarian walks out of OR with the kidney that he has just removed from the donor.

"I really am lucky. I should have been dead a couple of times," said Leon Hinnencamp, kidney transplant recipient.

Hinnencamp is not alone. Scores of other patients — men, women, children, and infants — have received a "second chance to live," through the efforts of doctors and medical staff at the University of Minnesota, recognized as the world's leading kidney and other organ transplant center.

Unfortunately, like most Americans, some physicians living far away from transplant centers, consider all transplants to be experimental and fail to recommend transplant surgery to patients who can benefit from this procedure. U of M doctors estimate that hundreds of patients die each year because their physicians are not well-informed about the potential of transplants.

Hopefully, the recent flood of publicity about the University's organ transplant center will encourage physicians to seek transplants as a cure for their patients. For young and middle-aged sufferers of terminal renal disease, a kidney transplant is the only "cure," according to University Hospitals' chief of surgery Dr. John Najarian, whose surgical unit does more kidney transplants than any other in the world. U Hospitals' statistics show the "cure" has a 90 percent chance of being permanent for patients who receive kidneys from relatives.

Far beyond being in the experimental stages, kidney transplants have become routine at the University of Minnesota. Led by Najarian the U transplant team has perfected kidney transplantation into a highly sophisticated and successful procedure performed routinely at University Hospitals. Today, it's an everyday operation. Approximately 160 kidney transplants are performed each year.

Although kidney transplants have become routine, and University transplant staff are not as excited about the procedure as they used to be, they are excited about the high success rate — 9 out of 10 patients accept new kidneys.

The surgical technique for kidney transplantation dates back to 1902, but over the past 78 years, physicians have been developing methods to suppress the immune system of the body so that the transplant is not rejected. According to kidney transplant surgeon Dr. Ronald Ferguson, "The ultimate goal is to fool the immune system into thinking the graft belongs to the patient." Much progress has been made in this area. University medical teams use a combination of surgery, dialysis, and drugs to suppress the immune system and increase the body's acceptance of the new organ.

Najarian attributes the increased success rate in kidney transplants in part to the immunological research done at the University and the "new surgeons" on the transplant team: Dr. Ronald Ferguson, Dr. Richard Simmons, Dr. David Sutherland, Dr. William Payne, and Najarian, who spend as much time in the laboratory as in the operating room. "We're better today because of the lab work, not the surgery," says Najarian.

Ferguson says that a change in attitudes also accounts for the success — physicians are much more selective and patient about choosing the most perfectly matched transplant as possible.

Najarian cites several other factors for the increased success. They include great advances in immunology, discovery of new immunosuppressants like Cyclosporin-A, and more effective and efficient techniques in organ-matching, tissue-typing and patient monitoring.

But, despite the advances in transplant technology, doctors and researchers are still grappling with the problem of manipulating the body's tendency to fight off things foreign like bacteria, viruses, and new organs. "Although we can fool the immune system of mice into thinking the graft belongs to the patient, our knowledge of mice is 15 years ahead of our knowledge of people," says Ferguson.

So the struggle is far from over. Especially at the U of M transplant center, which concentrates on kidneys, implanting more than 150 per year — one-tenth of the U.S. total. But recently, surgeons and staff members at University Hospitals have expanded their work to include more heart, pancreas, and liver transplants.

The University of Minnesota is a locus of transplant activity. It begins with the department of surgery on the 11th floor, which Najarian made into the transplant center of the world, and spreads out to cover eight floors of transplant wards, labs, offices, and operating rooms. Activities include screening, testing, intensive care,

The removed kidney is being profused in preparation for transplantation.

treatment, surgery, post-op care of transplant patients as well as numerous pockets of immunological research projects made up of scientists, technicians and physicians producing immunosuppressant drugs and exploring new avenues to find the substances, techniques or technologies to offset the human body's rejection of transplant organs.

The support staff of other doctors, nurses, technicians and administrators needed to coordinate the medical/surgical/donor responsibilities is immense. Cost of transplant patients at the University is estimated roughly at $5 million a year. And an inestimable amount of money goes into the research which not only sheds light on transplant problems but might provide valuable information on other areas — cancer, arthritis, and other "immune" diseases.

For transplant recipients like Leon Hinnencamp, who got a new kidney, James Feehan, who has a new heart, Larry Gillingham, who has received a new kidney and new pancreas, and many more successful transplant recipients ranging in age from infancy through middle age who have suffered from chronic heart, kidney, or diabetic problems, transplantation has given them something priceless — "a normal life."

The U transplant team from bottom left: Dr. Richard Simmons, Dr. Ronald Ferguson, Dr. John Najarian, Dr. David Sutherland, and Dr. William Payne. Photo by Minneapolis Star.

UPDATE ON HEART & PANCREAS TRANSPLANTS

Surgeons at the University performed the fifth heart transplant operation in the history of the institution this past October. It was the second transplant here in three months.

Charles Seleskie, 49, of Hastings, Minn., received the heart of a 41-year-old woman in a six-hour operation. The heart transplant team included Dr. Robert Anderson, Dr. Ernesto Molina, and Dr. Ronald Ferguson.

The University's fourth heart transplant was performed July 9, 1980. Recipient James Feehan is doing well, as is the only other survivor among the first four transplants, Suzanne Huff, 36, who received her transplant in July, 1978.

Chief of surgery at the University Hospitals Dr. John Najarian said that he "anticipates the U of M will eventually be designated a heart transplant center."

While Seleskie received the donor's heart, patient Larry Gillingham received the donor's pancreas in a transplant operation performed at the University this fall. A 34-year-old fireman from Elkhard, Ind., Gillingham was suffering from pancreatic failure due to diabetes. He is only the 29th recipient of a pancreas transplant at U Hospitals. Only about 120 have been done in the world. The transplant was performed by Dr. Najarian and Dr. David Sutherland. Gillingham had received a kidney transplant at the U four years ago. Doctors report his kidney and pancreas are both functioning well.

Also this fall, surgeons at the University transplanted half a pancreas from a woman to her diabetic twin sister. It is the first such surgery in the world involving identical twins. Dr. Najarian reported that the 26-year-old woman who received the pancreas graft "was doing fine" after the operation and may be cured of her

Diabetic Judith Dent, 26, (right) received half of a pancreas from her twin sister, Joan McDonald in an operation performed this fall at the U. Photo by Dr. David Sutherland, one of the transplant surgeons who performed this operation.

"I've never felt better," said Larry Gillingham, 34-year-old pancreas transplant recipient, who was already riding the exercise bicycle a week after his transplant.

diabetes as a result of the operation.

The transplant surgery involved taking half the pancreas from Joan McDonald of Pueblo, Colo., and transplanting it into her twin sister, Judith Dent, also of Pueblo, who has been diabetic since she was four years old. The body needs only half a pancreas to produce the necessary amount of insulin.

The operation was performed by Dr. Najarian and Dr. Sutherland. It was only the fourth pancreas transplant involving a living donor. The transplanted pancreas is functioning normally.

Doctors say the recipient does not face the problem of organ rejection with part of the normal pancreas from a genetically identical sibling.

Najarian said that chances that McDonald will become diabetic are practically nil. Studies have shown that if the normal twin does not become diabetic within five years of the diabetic sibling, there is a 95 percent chance that she never will. If she doesn't become diabetic within 10 years, there's a 98 percent chance that she will not suffer from the disease.

Dent was suffering from early signs of retinopathy. The transplant should reverse this trend completely, "We hope to have cured her diabetes," Najarian said.

Pancreas transplants are even less common than heart transplants. Over 400 heart transplants have been performed in the world, compared to only 120 pancreas transplants.

U of M surgeons performed 14 whole pancreas transplants between 1966 and 1973, then began a program of transplanting only the pancreatic islet cells, which produce insulin.

A new series of segmental pancreas grafts began in 1978. Dent's surgery was the 16th transplant in this series.

Sutherland said he believes in a few years transplants will be accepted as treatment for a fairly large number of people who become diabetic when they are juveniles. It is estimated that 10,000 new cases of juvenile-onset diabetes occur each year in the United States. Ten million Americans suffer from diabetes, and the incidence of the disease is increasing 6 percent a year, according to the American Diabetes Association.

Sutherland said that about a fourth of juvenile diabetes develop serious complications such as eye problems leading to blindness, kidney failure and loss of sensation due to nervous system difficulties. If doctors could identify the patients who will develop serious complications, they hopefully could prevent them with pancreas transplantation.

FAMILY COOPERATION COULD EASE SHORTAGE OF TRANSPLANT ORGANS

Thousands of them die every year in accidents. They are mostly young, healthy people between the ages of 15 and 25. They are also the ideal suppliers of the "gift of life" — organs and other body parts suitable for transplantation.

Permission to use the organs of an accident victim for transplantation must come from the family. Jane Van Hook, coordinator of the University of Minnesota Organ Donor Program, counsels the family on the transplant procedure and how the organs will be used.

"Of course this is a hard time for the family to make a decision about donation," Van Hook said. "Signing the permission papers is a very final thing. It is probably the family's first acceptance that the person is dead. For many families it will be the first time they have cried."

Until the family makes a decision, the potential donor is kept breathing and his blood circulating by artificial life support. "These people don't look dead," Van Hook said. "Their color is still good. The family can see their chests are still moving, even though the oxygen is coming from a machine." Under these circumstances, it is hard to accept death, Van Hook said.

Kidneys are the organs in greatest demand, but hearts, livers, eyes, bones, and skin for burn victims are also needed. "More than half the families I talk to will give everything," Van Hook said.

Many people can't separate their attachment to the person who has died from the body, Van Hook said. They still identify the body as the person. But even families who are not very receptive to the idea of organ donation usually give at least one organ when asked — generally the kidneys, livers, or eyes. "People are more willing to donate kidneys and livers because they don't associate any emotional or

Jeanette Kircher donated her pancreas to her daughter Joi in June, 1978. The photo of this happy pair was taken by transplant surgeon Dr. David Sutherland in August, 1980.

personal attributes with them. The eyes and heart are often considered too important a part of the person's personality and soul," Van Hook said.

Van Hook does not try to convince the family to donate their relative's organs, nor does she discuss the recipient "although sometimes I do so the family knows there is a need for the organ," she said. The family of a young man who died recently agreed to donate a kidney only after Van Hook told them a 13-year-old girl was waiting for a transplant. "He would have been a good donor for heart, eyes, liver and bones," Van Hook said.

Often the families object to donation because they don't want the person kept on life support for too long, Van Hook said. The time between death and the transplant must be as short as possible. Once the respiratory system begins to degenerate, the organs deteriorate quickly, Van Hook said. Surgery is usually done within 12 hours after the family grants permission.

Once blood samples and tissue cultures are taken and a matching recipient is found, the donor is taken to surgery. For liver, heart and pancreas transplants, the recipient's and the donor's organs are removed simultaneously in adjacent operating rooms so the organ can be transplanted immediately. The donor is removed from life support when surgery is completed.

"We try to keep the donor on life support for no longer than 24 hours," Van Hook said. "The body is very fragile at this point. We have lost donors during the ambulance ride from another hospital to the University."

"There is a serious shortage of organs," Van Hook said. "We can't transplant them fast enough." There are 35,000 kidney patients on dialysis in the United States. Half of them are good candidates for transplants. Last year only 4,000 kidneys were available.

Most transplants are very successful, Van Hook said. The success rate for kidneys is 80 percent, for eyes, 95 percent. Eyes can be kept in culture for up to three weeks and skin can be freeze-dried. Hearts, pancreases and livers must be transplanted immediately. Kidneys can be preserved for 48 hours.

Many people are not even aware of the need for organs, Van Hook said. "I have had people ask 'What for?' when I have asked for donations."

Allowing donation can be a very positive decision for the victim's family, Van Hook said. "I look at my job as giving the donor's family the chance to pull something positive out of a stupid, needless death."

Kidney and pancreas transplant recipients Mary Ellen Baran and Al Beckler enjoy their new lives. Baran received a kidney in 1972 and a pancreas in 1978. Beckler got his kidney in 1974 and a pancreas in 1979. The photo, taken by Dr. Sutherland, was shot in July, 1980.

U OF M COMPLETES SUCCESSFUL STUDY OF NEW ANTI-REJECTION DRUG

A promising new drug in the fight against organ rejection in transplant patients has been used successfully at the University of Minnesota.

Dr. John Najarian, chief of surgery at University Hospitals, announced that a six-month experimental study has shown "excellent results" in 12 kidney transplants.

Rejection is the body's reaction against invading organisms and is triggered in transplant operations by introduction of the alien organ.

Massive doses of drugs to suppress the immune response are used to fight graft rejection, but the drugs also lower the body's resistance to infection.

In the University study, 12 adults received doses of the new drug, called cyclosporin A, following their kidney transplants. All 12 patients were given cadaver kidneys. Experience has shown that these patients are more likely to suffer organ rejection than patients who receive organs from relatives.

"There were no lost grafts (transplanted kidneys). There were no serious complications. There was no suppression of the white blood cell count," Najarian said of the patients in the drug experiment.

Cyclosporin A is the first new immunosuppressant drug in 20 years, Najarian said. An extract from a fungus, the drug was first isolated by a Swiss pharmaceutical company (Sandoz) from soil. The company was routinely mass-screening soil for useful antibiotics at the time of the discovery.

University of Minnesota Hospitals is one of only a few institutions in the United States authorized to use the drug on an experimental basis, Najarian said.

"We are extremely optimistic with the early results," he said. "We will now start a random study and should have some clear-cut answers in two or three years."

Among the "unknowns" are what the long-term side effects of the drug might be. But in light of the promising results to date, Najarian said he is confident cyclosporin A will eventually be used routinely in the Hospitals' transplant program. University of Minnesota surgeons now perform 160 kidney transplants a year. Heart, liver and pancreas transplants are also performed.

Mrs. Eleanor Crawford of Denver, Colo., was the twelfth and final patient to receive the new drug in the University study. She was discharged from University Hospitals "feeling great and having high hopes for the future," she said.

"I was ready to go for anything," said Crawford, who suffered from nephritis (inflammation of the kidney). "I didn't have anything to lose. I was tied up to that (dialysis) machine."

A closeup of a kidney transplant in progress.

IMPLANTING AN ARTIFICIAL PANCREAS: THE INSULIN PUMP

Making medical history, U of M doctors implanted an artificial pancreas, called "the insulin pump," in a 56-year-old man with diabetes, September 25, 1980. This is the world's first implanted insulin pump, an experimental device that should free him of the daily ritual of insulin shots, said U of M doctors.

The pump is about the size of a hockey puck, functions like an artificial pancreas to deliver the steady flow of insulin to the blood-stream. By maintaining the body's insulin level more steadily than can be achieved by daily shots, the pump should help minimize eye, kidney, and blood vessel damage that often complicates severe diabetes, said Dr. Henry Buchwald, head of the team that developed the device.

"This is the first patient in the world to have an implanted insulin-delivery system, although some external units have been used," said Buchwald, a U of M professor of surgery and biomedical engineering.

Buchwald's patient, a tool-and-die maker who asked not to be named, had the pump implanted under the skin below his left collarbone in a one-hour operation.

Buchwald was joined in the work by Dr. Richard Varco, professor of surgery, Frank Dorman and Perry L. Blackshear, Jr., of the U's Mechanical Engineering Department, and Dr. Perry Blackshear, who began work on the pump at U Hospitals a decade ago and now is in Boston.

The pump consists of two chambers, one of which holds the insulin while the other holds a compressable fluorocarbon gas. Once every two weeks, the drug reservoir is filled with about 1.3 ounces of insulin solution using a syringe inserted through the skin. The injection of the insulin compresses the fluorocarbon into a liquid, and its gradual expansion over the next 12-14 days drives the insulin through a narrow nozzle into a tube leading to the heart. There are no batteries and the driving force lasts forever.

"What we plan to do now is watch this patient and then, within the next year or so, launch a trial at the University of Minnesota with 10 to 25 patients," Buchwald said. He said that during this time other institutions will be starting similar programs with the same device. "I would think that within a year or so we will have enough data to put the matter before the FDA for general market clearance," he said.

The implantable infusion pump already in use. Photo by Tom Foley.

Alumni Notes

1920s & 1930s

Fritz D. Hurd, 24, has lived in Great Falls, Montana 38 years and retired in 1977. He was an otolaryngologist until his retirement. He writes that he spends his time bicycling and keeping in good physical condition. His daughter is an R.N. in the Columbus Hospital, Great Falls, and his son works for a pharmaceutical company.

Rodney F. Sturley, '37, St. Croix Falls, Wi., retired July, 1979 from his ob/gyn practice. He underwent open heart surgery in 1975, receiving a triple bypass. He moved to Hobby Farm, containing 20 acres with "lots of grass to mow and a big garden." He was formerly an assistant clinical professor, obstetrics/gynecology department, University of Minnesota and was a physician with the St. Paul Women's Clinic for 37 years. He lists his interests as "taking care of his 20-acre farm, golf, downhill and cross-country skiing."

1940s

Howard A. Andersen, '42, a specialist in thoracic diseases at the Mayo Clinic, received the American College of Chest Physicians' Distinguished Fellow Award at the ACCEP's 46th Annual Scientific Assembly this month.

Roy W. Dickman, '45, Edina, Minn., chief of surgery at Methodist Hospital, St. Louis Park, Minn. is also an assistant professor in the Department of Family Practice at the University of Minnesota. He was given the "Teacher of the Year Award by the Methodist Hospital/University Family Practice group. His major field is general, thoracic, vascular surgery. His special interests include teaching, hunting, and touring the U.S. in a motorhome. He and his wife Patricia have three daughters, Pamela, Deborah, and Maureen.

Raymond G. Rowberg, '46, is director of medical education at Sacred Heart Medical Center, Spokane, Wash. He writes that he was awarded the Wildefeast Tail from the Masai tribe in Tanzania as a reward for starting a "Barefoot Doctors School." He is an internist with special interest in geriatics and tropical medicine. He has six children; three sons in medicine at Milwaukee, Wis., and one is a teacher in a junior college in Tanzania.

1950s

Mitchell J. Rosenholtz, '56, a pathologist, was appointed a full professor at the University of Missouri Columbia Medical Center. He is also active as the chairman of the Boone County Common Cause.

1960s

Larry R. Erickson, '63, is a dermatologist practicing in Lakewood and Evergreen Colo. He spends his time playing racketball, skiing, long-distance running — 10K to Marathon distances. He ran the Mt. Evans Trophy run in July 1980 and the Denver Marathon in October, 1980. He and his wife Valerie have four children: Melanie, 16; Tim, 13; John, 10; and Lisa, 8.

Clarence E. Henke, '63, LTC, MC, US Army, graduated from the Diagnostic Radiology Residency Program, Brooke Army Hospital, San Antonio, Tex., in 1980. He was selected for promotion to Colonel in 1981 and was appointed chief, department of radiology and nuclear medicine at Reynolds Army Hospital, Ft. Sill, Okla. Jan. 1, 1981. He spends his time flying, mountain climbing and jade carving. His daughter Wendy is a third-year medical student at Mayo Medical School and his son Kevin is a graduate student in math/computer science at the University of Texas.

R. Michael Blaese, '64, chief, cellular immunology section, metabolism branch, National Cancer Institute, National Institutes of Health, received an E. Mead Johnson Award on Oct. 27 at the Academy meeting. He was honored for his work on immunodeficiency diseases, monocyte function and immune regulation and its disorders. He trained as a resident in the U of M's pediatrics department 1965-66. Other Minnesota trainees have received this award including Drs. Robert A. Good, Richard Smith, James G. White and Paul Quie.

Blaese

Richard A. Wright, '69, is director of adult medical services at the Denver Neighborhood Health program, Denver, Colo. He is an internist with a specialty in infectious diseases. His hobbies include skiing, marathon running, and high peak climbing. He and his wife Helen have two children, Jason and Michelle.

1970s

Jack Muellner, '72, is a family practice physician in charge at the San Bernadino Kaiser clinic in California. He writes that Southern California could use a few more "good family practitioners."

Ronald R. Richardson, '73, has been appointed a consultant in the division of medical oncology at Mayo Clinic, working with Dr. D. L. Ahmann and Associates. He has been serving as assistant professor of medicine in the division of oncology at Vanderbilt University and chief of the division of oncology at St. Thomas Hospital, Nashville.

John M. Mahowald, '77, completed a residency in internal medicine and plans to study pathology under the direction of Dr. Jesse Edwards. Afterwards, he will begin a cardiology fellowship in July, 1981. While in Medical School here, he was a winner of a Minnesota Medical Foundation Student Research Grant. As a student in the U of M Graduate School, microbiology department, he conducted a six-month research project on the regulatory function of monocytes in lymphocyte transformation.

In Memoriam

Robert Hugh Monahan, '42, a renown ophthalmologist, died of cancer at the age of 66, at the St. Paul Ramsey Hospital. He led the development of national standards for eye technicians and was chief of the St. Paul-Ramsey Medical Center Ophthalmology Department for 14 years. He also headed the U of M Medical School Eye Pathology Laboratory for 20 years and was in private practice in St. Paul as well. He founded and headed the Joint Commission on Allied Health Personnel in Ophthalmology, which sets national standards for paramedical personnel in eye care. He also served as president of the Minnesota Society for the Prevention of Blindness and the Minnesota Medical Alumni Society.

Daniel R. Goldish, '32, a family practice physician in Duluth, Minn., died of cancer Oct. 25, 1980, at the age of 72. Born in Duluth, he returned to Duluth after medical school to do family practice and surgery. He was in private practice until 1978. He served as chief of staff of St. Mary's Hospital and was past president of the Duluth Symphony Association. Active in civic and religious affairs, he received a letter in 1969 from Israeli Defense Minister Moshe Dayan complimenting him on his efforts in behalf of Israel when he served as president of the Jewish Foundation.

Gilbert Paul Wenzel, '37, died Nov. 1, at the age of 68 in Tarpon Springs, Fla., where he had lived after he retired. He had been one of the first family practice physicians in St. Paul. Born in St. Paul, he lived there until his retirement.

A family practice physician, he was a pioneer in group practice. He founded the Rice Street Clinic and the Capitol City State Bank. A sportsman, he was a member of the gymnast team in the 1932 Summer Olympics in Los Angeles.

Leo L. Zachman, '30, a St. Paul family practice physician and general surgeon, died March 25, 1980 at the age of 77 — two years after his retirement from medical practice. Of German descent, he was conversant in German and treated many German patients. He did family practice and general surgery for 43 years. In the Army, he was chief surgeon in charge of the U.S. prisoners-of-war.

Edward C. Menefee, '46, died in September, 1980 at St. Mary's Hospital in Rochester, Minn. He had been the Freeborn county coroner for the past 22 years. He was 56. A pathologist, he had practiced in Austin, Blue Earth, Owatonna, Wells and Albert Lea, Minn., and was affiliated for the past five years with the Laboratory of Clinical Medicine in Sioux Falls, S.D.

Bernard E. O'Reilley, a postgraduate fellow in ophthalmology and otolaryngology at the U of M in 1925, died July 8, 1980. He was 79. After practicing several years in Minot, N.D., he returned to practice in St. Paul, where he was born. He was on the staffs of Miller, St. Joseph's, Children's and Ancker Hospitals. He retired from practice in 1959 and moved to Arizona.

Schuyler P. Brown, '41, an orthopedic surgeon, died of cancer Dec. 1, 1980. He was 74. He had been an orthopedic surgeon at the Bay Pines VA Medical Center, Fla.

Ralph F. Meincke, '50, a surgeon in Coos Bay, Ore., died of a coronary at the age of 61 in May, 1980. He had practiced there for the past 29 years. Born in Lake City, Minn., he was a veteran of World War II, serving as a Navy pilot. He held a naval reserve rank of captain.

Duncan V. Luth, '41, an anesthesiologist from Spokane, Wash., died July, 1980.

Fred C. Holzapfel, '36, a family practice physician from Minneapolis, Minn., died recently at the age of 71. He was retired and living in Golden Valley, Minn.

Benjamin C. Sloan, '41, an internist from Los Angeles, died in March, 1979.

Clarence H. Buckley, '33, a retired surgeon and family practice physician living in Eau Claire, Wis., died in March 1980.

Cecile P. Bell, 94, wife of the late Dr. Elexious T. ("Tommy") Bell, died in January. Dr. Bell was head of the University's department of pathology for more than 30 years.

The family has requested that memorials for Mrs. Bell and Dr. Bell be given to the E. T. Bell Institute at the University, % the Minnesota Medical Foundation. Donors may use the envelope in the center of this magazine to send a memorial gift. Please indicate that your gift is a Bell memorial.

We regret that we cannot provide more detailed information in some of our death notices, but oftentimes more information is not available to us within our deadline constraints. Rather than omit the notice or delay its announcement, our policy is to publish it so that our readers may be kept informed of friends' or colleagues' deaths. If further information becomes available, we will try to include it in a subsequent issue of the magazine.

MINNESOTA MEDICAL FOUNDATION

Your WILL — An Oportunity to Say YES

YES, to your family who will be better off financially and emotionally at your death if you leave a Will.

YES, to friends or relatives you want to remember in a special way.

YES, to yourself. You have a right to decide what will become of your life's earnings.

YES, to the medical students and researchers who depend on individuals like you for financial support through the Minnesota Medical Foundation.

If you are interested in receiving additional information please print your name and address below and insert this card in the reply envelope in the center of this bulletin, or mail to:

Donald A. Engel
Minnesota Medical Foundation
5412 Powell Hall
University of Minnesota
Minneapolis, MN 55455

Dear Mr. Engel:

- ☐ Please send me your free booklet on wills.
- ☐ Please send information about how to include the Minnesota Medical Foundation in my will.
- ☐ I have already included MMF in my will.

☐ Please check this box if you are a University of Minnesota Medical School graduate.

Name _____

Street Address _____

City _____ State _____ Zip _____

Minnesota Medical Foundation
5412 Powell Hall University of Minnesota
Minneapolis, Minn. 55455

Minnesota Medical Foundation
5412 Powell Hall University of Minnesota
Minneapolis, Minn. 55455
Phone: (612) 373-8023

ADDRESS CORRECTION REQUESTED

Happy New Year from the Minnesota Medical Foundation.